

Minutes

Meeting name	Demand Control OC6 Workgroup
Meeting number	1
Date of meeting	5th December 2012
Time	10:00am – 14:00pm
Location	Ramada Encore, NEC, Birmingham

Attendees

Name	Initials	Company
Audrey Ramsay	AR	National Grid
Damien McCluskey	DMc	National Grid
Jason Bareham	JB	National Grid
Andy Walden	AW	National Grid
Alan Creighton	AC	Northern Powergrid
David Mobsby	DM	Scottish and Southern Power Distribution
Dan Randels	DR	Electricity North West
Andy Dixon	AD	Scottish Power
Nigel Buckland	NB	Western Power
Lisa Waters (tele-con)	LW	Waterswye

Apologies

Name	Initials	Company
Paul Roebuck	PR	National Grid
Graeme Dawson	GD	Npower

1 Introductions/Apologies for Absence

1. AR provided an introduction to the group defining the expectations of this Workgroup, making particular reference to the terms of reference set out.

2 Main points of meeting

2. JB discussed Grid Code requirements in relation to OC6 and demand control.
 - Within the Grid Code OC6.5.3 it states as soon as possible but in the event no longer than five minutes from the instruction being given by NGET.
 - 4 stages of approximately 5% are available at all times, a further 4 stages available if requested by 1600 hours previous day, else on best endeavors
 - Voltage Control is a typical way that DNOs respond to Stage 1 and Stage 2 demand control, but it is down to them on what action to take
 - 5 minutes requirement based on being able to stabilise and secure the National Electricity Transmission System in emergency situations
 - Uncertainty with regards renewable and embedded generation capability at low frequencies and ROCOF protection issues due to the expected future system inertia being lower
 - Transmission network constraints and energy balancing becoming more volatile with increasing numbers of interconnectors and renewables.
 - Longer time periods to achieve demand management increase the risk that significant disruption to the network will occur during multiple faults
3. It was asked whether a priority list exists before issuing demand control within the Grid Code. AR answered that there currently isn't, but it is operationally best practice. JB said it is not something that National Grid would want to use initially, and would only be used in an emergency situation.
4. The five minutes to implement demand management was highlighted, where did this timescale originate? JB answered that we can only assume that this timescale was originally worded as promptly i.e. time taken to take the call and respond. At the time of the CEGB, five minutes was what could be delivered – in the 80's [1, 2, 3] substation staff would implement straight away. AC mentioned that voltage reduction is implemented at DNO primary substations (i.e. the last automated voltage control point) rather than assets that had previously been owned / operated by CEGB and that in practice the implementation time with modern SCADA systems is probably faster than in the past.
5. AC discussed his paper (PP11/02) that was presented to the GCRP in February 2011.
 - Summarised DNOs positions around demand reduction being implemented within five minutes and investigated the timing of each of the steps that need to be taken to implement voltage reduction.
 - The historic expectation was that a 3% voltage reduction would deliver a demand reduction of 5%, however studies had indicated that the demand reduction for a 3% voltage reduction was variable, and more likely to be in the region of 3%.
 - Discussed that the Grid Code is drafted to require 5% demand reduction at the time of the instruction and that this too introduced a degree of uncertainty around what could actually be delivered.
 - The DNO's suggested that one DNO might be able to deliver a 3% voltage reduction within five minutes, however it was agreed that in general demand reduction is more likely to be delivered in a period between 5-to-12 minutes. The paper described that all DNOs can not make this timescale, and it was suggested by the DNOs that this has never

actually been achievable. This piece of work established what can actually be delivered in reality.

6. Demand disconnection schemes are designed to spread out the demand disconnected across the distribution network, and is not selective as to who gets switched off.
7. The Workgroup attendees debated whether demand control could also be managed through commercial contracts with several options discussed.
8. DNOs entering into commercial contracts where demand could be interrupted in certain areas was discussed, but it was decided that this would not provide the required magnitude of demand reduction in the timescales required.
9. The Workgroup attendees discussed that situations where demand control is used are rare. There have currently been 2 events in the last 3 years, February 2012 that lasted for around one hour and May 2008 that was on and off throughout the day. In both of the events the system has been secured despite demand control not working as expected.
10. It was asked whether voltage reduction results in any problems for industry customers and was answered with the impact has never been reported to date by customers. The key advantage of voltage reduction is that it generally has no observable impact on domestic, industrial or commercial customers and in particular does not result in disconnection of customer supplies. It was generally accepted that because of this demand control via voltage reduction is a valuable tool that can be used in a system event to reduce the prospects of implementing demand control via demand disconnection. The key to its value is to understand the demand reduction that it is likely to deliver, the timescales in which that reduction can be delivered and how it should be used in conjunction with other demand management tools.
11. STOR (Short Term Operating Reserve) prices were discussed by the group, National Grid currently spends £40/50m on STOR per year. Recent STOR prices have come down due to the volume in growth of new providers. If that service is brought for STOR and used as a primary measure, we could possibly go back to use this in the case of demand control when a frequency loss occurs.
12. National Grid discussed options such as time of delivery, how much can actually be delivered, implications for National Grid to accept a longer lead time and what could be delivered now using voltage reduction. It was highlighted at this point whether it would be good value for customers to improve systems to hit the key requirements. Level of risk to customers needs to be explored further.
13. Much of the discussion and suggestions at this stage are based on assumptions as little or no testing has taken place. The demand control response has never been formally tested (as black start is) it has only been used when required. It was highlighted that a benchmarking exercise with all DNOs could be beneficially, although a high level exercise carried out as part of the development of the GCRP paper indicated that such an exercise would not be trivial and would need to be carefully developed to provide meaningful information. If the view from NG is that the voltage reduction does need to be implemented materially quicker than that provided by present DNO systems than such an exercise may be worthwhile as this would enable the costs to be estimated. These costs would need to be balanced against the benefits delivered. Discussions mentioned possible issues over whether the power consumption of modern electrical / electronic devices is less responsive to voltage reduction.

14. The Workgroup attendees suggested investigation is needed into whether the issues with demand control via voltage reduction are technical or because of the infrequency with which the facilities are used. Is there need for more robust instructions from the National Grid control room. Discussed that an awareness exercise could be carried out, similar to DECC's exercise Faraday.

3 List of Actions

15. NG to review the February 2012 event to assess the learning points eg implementation timing and demand reduction actually delivered.
16. NG to review the processes that would need to be changed if the VR instruction was applied sooner than at present
17. NGET to clarify the process / exchange of information between the NG and DNO control room staff at the time the DC service is required. E.g. routine refresher training may speed implementation
18. NGET to clarify their requirement for Demand Control, the volumes to be delivered and timescale required. To assess whether delivering VR in a 5-15 minute period is acceptable when used in conjunction with other tools e.g Demand Disconnection.
19. NG to do a desktop exercise to see if an 'emergency STOR' service could be delivered. NG to investigate the longer term prospects for securing more Reserve that could be called upon at very short notice.
20. DNOs to identify the general implications associated if demand disconnection is implemented. DR to prepare an initial draft.
 - Demand Disconnection - CI/CML exemption
 - Bad PR and managing the Customer communications impact.
21. NG to review the implications in the EU Network Codes

4 Suggested ways forward

22. Actions will be dealt with by relevant parties prior to the next Workgroup meeting.
23. The Workgroup needs to draw this back to the scope of the 'Terms of Reference' and deliver a Workgroup report back to the GCRP.

5 Date of Next Meeting

24. Next meeting towards the end of January and will take place at NG House Warwick, or at a location nearby. The exact date will be confirmed at a later stage.